Using Ethnographic Research to Improve Malaria Management in Young Children

Introduction

Malaria is a major cause of death and illness in the developing world, particularly in Africa, where 80 percent of cases occur. Children are especially vulnerable and most malaria deaths occur in the under fives. Severe malaria threatens life, causes convulsions, severe anaemia and other complications in young children.

Early treatment with an antimalarial drug can save lives. However, anecdotal evidence suggests that many young children with malaria die because they never reach a health facility or are brought for treatment when their illness is already very advanced. A better understanding of the extent of this problem and the reasons for it is essential to develop effective strategies to reduce childhood deaths from malaria.

How can research help?

The WHO Special Programme for Research and Training in Tropical Diseases (TDR) has, therefore, developed simple guidelines (*Conducting a Rapid Study of Malaria Case Management in African Children*) for research by health workers or policy makers to identify problems in case management of malaria. The guidelines are intended to help find out what families know about malaria, what signs and symptoms they consider serious, how they care for children with malaria at home, and when and where they seek treatment. The information can identify problems in case management and where management can be improved.

The research is conducted in two stages. The first stage involves collecting information from key persons, mothers, and health providers, and uses open interviews with mothers of young children, a videotape of sick children, questionnaires with mothers of children with malaria and with health workers, traditional healers, and drug sellers. The information is used to develop the tools–a brief questionnaire and a survey-for conducting the second stage of research with many mothers of children.

Mothers are asked to list signs and symptoms of malaria, to describe past episodes of illness, to rate signs in terms of severity of illness, to talk about the causes of childhood illness, and to show what medicines they have in the home. Local terms are compared with the signs and symptoms shown on the video and particular emphasis is given to finding out what terms are used to describe convulsions and anaemia. Health practitioners are asked about how families manage malaria and are also asked to describe what they would do when presented with a case.

Research has been completed in several African countries to validate the methods, and the research results have provided valuable clues about common factors that delay antimalarial therapy of children with signs of severe malaria. These findings highlight the need for new approaches to provide early and effective treatment. This document summarises findings and conclusions of the African studies and discusses their implications for policy and programme implementation.

KENYA

Background

The study was conducted in four rural villages in Kilifi District, a malaria holoendemic area in south-eastern Kenya with a short and a longer rainy season, where malaria is the single highest cause of child death in hospitals. Villagers have access to a health centre within walking distance and local shops stock antimalarials. The nearest dispensary is 8km away and the nearest hospital 15 km away.

Summary of findings

Local terms, perceptions about illness severity and causation

- People use the term *homa* to describe a range of illnesses and in association with symptoms including fever ('hot body'), cough and headache.
- The term malaria is associated with high fever, chills, vomiting, and joint pain.
- Mothers identify fever and convulsions as signs of severe illness, but only a few associate convulsions with malaria.
- Anaemia (called *safura*), recognised as a moderately severe sign, is not associated with malaria.
- All illnesses mentioned are thought to be caused by god, evil winds, changes in the weather, or eating bad food. Convulsions are attributed to an evil spirit and anaemia to malnutrition.
- Of the few respondents who identified malaria as an illness, only two mentioned mosquitoes as the cause.

Treatment and care-seeking behaviour

- Illnesses perceived not to be serious are cared for at home, using over the counter drugs (antipyretics and chloroquine). Herbal teas and baths are used to treat convulsions. In some cases, no treatment is given because the illness is so common or because mothers believe that it 'strengthens' the child.
- Nearly half the mothers said that they bought medicines as needed. Of the others who had some medicines in the home, half had aspirin-based antipyretics, a quarter had antimalarials purchased from shops, and some had cough syrups and antibiotics. None of the mothers showed the interviewers any traditional medicines.
- Care-seeking behaviour depends on factors such as perceived severity of illness and its duration, distance from health facilities, and financial considerations.
- Husbands are consulted before seeking outside help.
- Although most mothers would prefer to treat with drugs, purchasing them from a shop is expensive and obtaining free drugs from a health centre involves transportation costs.
- When asked to state their preferred source of health care, mothers chose the district hospital over the local dispensary and health centre, purchasing drugs, or visiting traditional healers.
- Although health workers reported an increase in the number of children with convulsions brought to health facilities as a result of community education, they noted that most mothers do not bring children with malaria to the health facility until the third day of illness, and this is usually because of concerns about fits, cough, and high temperatures.

What were the main findings?

Although the four African studies identified cultural differences, for example, in local terms used to describe illness, there was considerable consistency in findings related to the following areas.

Terms used to describe malaria and other childhood illness

All four studies found that malaria is neither a widely used nor understood term. Many of the terms people use to describe malaria symptoms are also used to describe symptoms that may be caused by other illnesses, and lay terms do not easily equate with biomedical classification of malaria disease.

Different terms are used to describe convulsions and anaemia and, in all four studies, these conditions were perceived to be distinct from malaria illness.

Perceptions about severity of illness and signs of severe malaria

Perceptions about what constitutes severe illness vary, but often parents become concerned when a child has a combination of symptoms. Fever is only perceived to be serious if it persists or is accompanied by other symptoms such as vomiting, headache, cough, or diarrhoea.

Convulsions or respiratory distress alone are usually considered to be serious, although neither is associated with malaria. Similarly, signs of anaemia are recognised but are associated with other illnesses than malaria.

Knowledge and beliefs about causes of illness

Simple or uncomplicated malaria, however described, is perceived to be an illness caused by god or by environmental influences such as the weather, food, or mosquitoes. Evil spirits were only mentioned as a cause of malaria in one study. Mosquitoes were mentioned only when communities had been exposed to health education about malaria, although it was not clear how well people understand the concept of malaria parasites.

Complications of malaria are perceived to be separate conditions and are attributed to different causes. Convulsions are almost always associated with evil spirits, respiratory distress with recognised respiratory illnesses such as pneumonia and asthma, and anaemia with malnutrition.

The mothers interviewed had limited access to media (radio and television) and obtained advice and information from older family members, husbands, neighbours, and traditional and spiritual healers.

Treatment and care of malaria in children

Uncomplicated malaria is generally considered to be a minor illness, that is treated initially at home with herbal remedies and over the counter drugs, mostly antipyretics. With the exception of the Ethiopia site, which was closer to health facilities than the other sites studied, mothers usually purchased over-the-counter medicines from drug sellers, because these sources are nearer and more convenient than other options.

Most families were able to buy drugs or traditional remedies or to obtain credit from shopkeepers or herbalists. Drug sellers often allow mothers to purchase one or two tablets if they cannot afford a full course of treatment. In Ghana and Kenya, although many mothers treat mild cases in children at home with antimalarials purchased from drug sellers, few mothers buy or administer a full course of treatment.

If initial treatment fails, the husband or grandmother is usually consulted before seeking treatment elsewhere.

The source of treatment chosen depends on accessibility and affordability.

All studies found that the approach to treatment and care-seeking for a child with convulsions is very different. Traditional healers and herbal remedies are almost always the first recourse.

GHANA

Background

The Ghana study was conducted in a dispersed rural population in Kassena-Nankana District, with poor access to health facilities. The nearest health post is 8km away, the nearest hospital is 45 km away, and transport is limited. However, antimalarials are available from local shops and travelling drug sellers.

Summary of findings

Local terms, perceptions about illness severity and causation

- Various terms are used for common childhood illnesses, but *pua* (used to describe symptoms such as 'hot body', vomiting, headache, chills and signs of respiratory distress) and *sa-ar* are most closely associated with malaria.
- Different terms (*niengo*, *sagsag*, and *zumzuri*) are used to describe convulsions, which are recognised as a distinct and serious illness unrelated to *pua* or other conditions.
- Few mothers knew the term malaria, although some mentioned *feba* (fever) during current illness interviews.
- Fever combined with vomiting and any type of convulsions were considered to be serious.
- *Pua* was attributed to a number of causes, including god, mosquitoes, heavy rains, evil spirits, cold, dirt in the stomach, and eating certain types of food.
- Convulsions, depending on the type, were attributed to a bird flying over a sleeping child or to a pregnant woman seeing a caterpillar and failing to take ritual cleansing action afterwards.
- Anaemia is attributed to various causes including a pregnant woman touching a frog or looking at a corpse.

Treatment and care-seeking behaviour

- Most caretakers try treating *pua* with home herbal remedies first. Some give chloroquine–which is readily accessible-when they believe it is needed, although few buy or give a full course. All the homes surveyed had some medicines, including paracetamol, chloroquine, aspirin, multivitamin syrups, cough syrups, and herbal remedies.
- Convulsions, because they are believed to have a spiritual cause, are treated by traditional healers.
- If there is no improvement, the husband and a soothsayer are consulted before seeking treatment elsewhere.
- The private clinic is the preferred option for prompt treatment, because it is nearer than the government clinic. The costs associated with using the more distant government hospital, in terms of transport, consultation, drugs, and food, are an important constraint.

Perceptions and practices of health workers, traditional healers and drug vendors

Health workers interviewed in the four studies reported that delays in bringing children with malaria to health facilities were common. They considered that this is because home remedies are tried first for mild malaria and because treatment for convulsions is sought initially from traditional healers. This was confirmed by interviews with traditional healers in Ghana, Malawi, and Kenya, who said that they saw many children with convulsions.

Although some healers refer children to the hospital if there is no improvement, others, for example in Malawi, do not refer children at all because they believe that traditional remedies will result in a cure. Some healers said that they advised mothers who had already visited a health facility to stop giving prescribed medicines.

Most drug vendors, when asked what they would do for certain symptoms associated with malaria, recommended aspirin-based drugs, sometimes in inappropriate doses for young children. Some vendors recommended antimalarials plus analgesics. Some, but not all, of the drug sellers in Kenya and Ethiopia, suggested that children with severe symptoms, such as convulsions, be taken to the hospital. However, shopkeepers mostly provide customers with what they ask for without seeking details about the illness or the child's age, and their knowledge of drugs, dosages, and the need to take a full course of treatment is generally limited.

What conclusions can be drawn from this research?

1. With a few exceptions, mothers act quickly to treat mild, uncomplicated malaria at home, usually with herbal remedies or antipyretics.

2. Mothers recognise important signs of severe illness such as repeated vomiting, inability to eat, drink, or suck, and changes in mental status. They are able to identify when children are rapidly evolving into severe illness.

3. While there is no delay in recognition of symptoms and the need for treatment, where people go to seek help for symptoms associated with severe malaria is dictated by the nature of symptoms and perceptions about their cause.

4. Children with convulsions or a change in mental status are taken first, and sometimes only, to traditional healers for treatment. This results from a widely held belief that convulsions are a special condition with a spiritual cause that requires ritual treatment.

5. Children taken to traditional healers are not treated with antimalarial drugs, and often such treatment is stopped. Often the child is not referred to a health facility.

6. Children with complications of severe malaria, without convulsions or a change in mental status, are more likely to be taken to a health facility for treatment.

7. Convenience and cost determine treatment and care-seeking decisions. Mothers are often well aware of the poor advice they receive from shopkeepers but may choose shopkeepers and drug sellers because of limited time, transport, or money for hospital fees.

ETHIOPIA

Background

The study was conducted in an urban environment in an epidemic area of Oromia Region. The peak malaria season is in September and November but, because there are many non-immune settlers from other parts of Ethiopia, malaria mortality and morbidity patterns are unpredictable. A government health centre, four private clinics, and five drug vendors are easily accessible, but the nearest referral hospital is 95 km away. In addition, services including microscopic diagnosis and free treatment, spraying, and health education are provided by the local malaria control sector.

Summary of findings

Local terms, perceptions about illness severity and causation

- *Bussa*, the official term for malaria, is associated with a wide range of symptoms including shivering, fever, headache, thirst, loss of appetite, and sweating.
- Although mothers and practitioners use the term *bussa* when talking about malaria, only 6 of 15 children in the survey who were described as having *bussa* were slide positive.
- Severity of illness is determined by ease of cure, fatality rates, duration of illness, and a child's age.
- *Bussa* is regarded as more severe when there are signs such as loss of appetite, high fever, lethargy, vomiting, or difficulty in sucking or breathing.
- Convulsions, considered to be serious by mothers, are not associated with severe malaria.
- Paleness (anaemia) is associated with the local 'bird' disease *dhukuba sinbiro*, not with malaria.
- No supernatural causes were mentioned, except possibly the evil eye as a cause of severe malaria, and *bussa* was attributed by most respondents to mosquito bites, poor environmental sanitation, and climate.

Treatment and care-seeking behaviour

- Mothers initially manage illness at home using traditional remedies. A third of the households surveyed had medicines, most commonly aspirin and herbal remedies obtained from traditional healers.
- If there is no improvement in a child's condition, women consult their husbands to obtain cash for outside treatment.
- In this urban setting, with a range of practitioners available, cost and quality of care determined choice. The malaria control sector was preferred to the government health centre and the private clinic, because treatment is free and slides are taken, because there are queues at the health centre and because the private clinic is expensive. Drug sellers and traditional healers were the least preferred options.

What needs to be done to reduce childhood deaths from malaria?

Prompt and effective treatment with an appropriate antimalarial is critical to preventing death from malaria. Children with severe disease are at high risk of death.

These studies suggest that families recognise symptoms of severe disease quickly and take action quickly. However, children who are at greatest risk of death often receive no antimalarial treatment at all and some are only taken to a health facility when other treatments fail, and when they are acutely ill. This is confirmed by health workers and referral histories, which indicate that many children are only brought to health facilities after being seen and treated by traditional healers.

Many of these children are never seen by the public health service. Therefore, efforts to reduce malaria mortality that focus on health services to provide effective diagnosis and treatment will have a limited impact. Early treatment closer to the home, with referral of severe cases, is more important.

Mothers will continue to seek treatment for symptoms associated with severe malaria from traditional healers as long as they, and those who advise them, believe that these conditions have a spiritual cause. Mothers will continue to care for children at home and to seek treatment from the most affordable and convenient source as long as health facilities are too far away, transport is scarce or expensive, and they cannot afford to pay for a full course of treatment. Appropriate drugs must therefore be developed and packaged for the context of the poor who are far from facilities and require early treatment.

Potential areas for future programme intervention include:

1. Reducing the marginalisation of traditional healers who care for severe childhood malaria, encourage immediate effective treatment with antimalarial therapy, ***and*** prompt referral of severe cases and full treatment of uncomplicated cases.
2. Training shopkeepers and vendors to provide correct and full therapy for uncomplicated malaria ***and*** prompt referral of severe malaria cases.
3. Ensuring access to formulations of antimalarial drugs that can be given as soon as the disease is perceived to be evolving to more severe malaria, either at home or by traditional healers.
4. Improving community awareness of the role of antimalarials and of the importance of giving a full course of treatment.
5. Develop innovative financial mechanisms such as micro-credit programs and community revolving funds that enable families to purchase the antimalarials required for effective treatment of malarial episodes.

MALAWI

Background

The study was conducted in eleven villages in a rural, irrigated, rice-growing area of Zomba District, southern Malawi, during the peak malaria season in December and March. Health services include a health centre located in the centre of the area, a rural hospital 17 km away, and a large hospital 32 km away. Medicines are sold by local shops.

Summary of findings

Local terms, perceptions about illness severity and causation

- The official term for malaria, *malungo*, is associated with hot or burning body, coughing, shivering, weakness, loss of appetite, vomiting, and a range of other symptoms.
- *Malungo* is considered to be severe because of its rapid onset and frequency, and is believed to be caused by mosquitoes, rain water, flies, and god.
- Convulsions are described using different terms and three types were identified. Convulsions are considered to be severe but are not associated with *malungo*, and causes mentioned include witchcraft and magic.
- Paleness (anaemia) is associated with 'opening of the stomach' or diarrhoea, not with malaria. Opening of the stomach is attributed to flies, poor hygiene, bad food and water, and poor weaning habits.

Treatment and care-seeking behaviour

- Mothers make treatment decisions, seeking money or assistance with transport from their husbands if required.
- Over the counter analgesics and antipyretics are tried first. Fewer than half of households surveyed had medicines in the home. The most common were aspirin purchased from a shop and herbal remedies obtained from traditional healers.
- If a child does not improve, he or she is taken to a government health centre where antimalarials are free, although shortages of drugs mean that mothers are often advised to buy chloroquine and sulphadoxine-pyremethamine from shops.
- In contrast, convulsions are treated by traditional healers and anaemia with a traditional remedy.
- Given a choice, mothers would prefer to seek treatment from the government health centre, followed by shopkeepers, a woman spiritual healer, the chief, and a male traditional healer.

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